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ARMY SPACE

MASTER PLAN (U)

APRIL 1987

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ARMY SPACE MASTER PLAN

APRIL 1987

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FOREWORD

(U) This Army Space Master Plan provides guidance for the Army's space program and its continued momentum towards excellence. It implements the Army Space Policy and directs actions to ensure appropriate space systems support to Army Mission Areas. Space assets and related technologies provide unique means to accomplish critical tasks in support of AirLand Battle Doctrine. Execution of this plan will provide important force multipliers to soldiers worldwide.

(U) The Army Space Master Plan is a living document that will be revised periodically to provide the most current guidance to exploit rapidly advancing space capabilities. This issue lays the foundation upon which we will build a strong Army space program.

JOHN A. WICKHAM, JR.
General, United States Army
Chief of Staff

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*POC for all sections of this Army Space Master Plan April 1987 is MAJ Mason, AV 692-3185. Questions on this plan should be addressed to MAJ Mason. Questions on future plans should be addressed to the POCs above.

CHANGE RECORD

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Executive Summary

1. (U) Purpose. The Army Space Master Plan (ASMP) implements the Army Space Policy by establishing the total Army space program. It provides strategy, guidance and taskings to develop and institutionalize the Army's exploitation of space. It mandates judicious selection and development of space capabilities which contribute to successful, efficient execution of Army missions.

2. (U) Background

a. (U) In the late 1950s the Army led the United States into the space age. The first US ballistic missile and the first US satellite in orbit were Army achievements. The Army provided the scientists and engineers who formed the nucleus around which the National Aeronautics and Space Administration (NASA) was formed. The first American astronauts rode into space aboard operational booster systems provided to the NASA by the Army. Other Army Space Firsts are listed in TABLE 1, page 1. In contrast, a 1984 committee of the Army Science Board examined the Army's utilization of space and concluded that for the most part, the Army was only a minor user of available space systems, without a great deal of influence in either design or operation of these systems. The paradox is that the Army's role and influence in space activities declined while the importance of space to military operations grew.

b. (U) Reversing earlier trends, the Army is now steadily progressing in obtaining and providing space-based support for its forces as evidenced by several major commitments. The Army is actively engaged in development and life cycle management and support of Military Satellite Communications networks and systems. Also, the Army has established its own component, US Army Space Agency (USASA) for the new, unified US Space Command (USSPACECOM), which was formed in Sep 85 to consolidate military space operations and ensure space support for theater commands. USASA is the precursor for the US Army Space Command, the Army operators of joint and future Army-dedicated space systems supporting AirLand Battle Doctrine. These and other similar activities demonstrate the Army's resumption of an active role in space in support of National and Defense space policies and objectives. The Army Space Policy, established in June 1985, demands a visionary outlook to fully exploit evolving space capabilities. It directs:

(1) (U) that the Army use space capabilities to enhance the accomplishment of strategic, operational, and tactical missions.

(2) (U) that successful implementation relies upon the development of Army expertise and judicious plans.

c. (U) Unified Action Armed Forces (JCS Pub 2) (Dec 86) assigns new, broadened responsibilities to the Army for operations in the space environment. These responsibilities include the provision of forces required for space operations and for strategic defense of the United States.

d. (U) US Army Training and Doctrine Command (TRADOC) has published an operational concept for Army Space Operations that provides the connectivity between space policy, Army missions, and AirLand Battle Doctrine. This concept is based on the premise that space gives the commander improved capabilities to apply the AirLand Battle tenets of initiative, agility, depth, and synchronization over the entire spectrum of conflict. Key elements of the Army Space Operations concept are:

(1) (U) Space operations are logical extensions of battlefield.

(2) (U) Space operations and space control affect success on battlefield.

(3) (U) Space systems offer commanders substantially greater capabilities:

- space-based command and control can be true means to synchronization.

- unique view of the battlefield for weather, recon and surveillance.

- potential security advantages supporting combat functions, especially low-intensity conflict and special operations.

3. (U) General

a. (U) The premise of this plan, like that of the Army Space Operations concept, is that space systems and space operations can make major contributions in satisfying Army warfare requirements. The plan provides a framework for use of current systems and development of future space capabilities to resolve Army mission area deficiencies.

c. (U) This first edition of the ASMP provides the methodology and foundation from which a more complete plan will grow. It does not yet provide all the guidance necessary to fully exploit space but will do so as it matures in future editions. Already there are established, space-related programs in the US Army Satellite Communications Agency (SATCOMA), the US Army Strategic Defense Command (SDC), and the Army Space Program Office (ASPO) (Tactical Exploitation of National Capabilities (TENCAP) program); these programs are vital elements of the Army's total space effort. They will be integrated into the ASMP through the development of the Army Space Architecture. The Army Space Architecture does not exist yet, but TRADOC is tasked to include it in the next edition of the ASMP. In the interim as new space support requirements and capabilities for the Army are identified, they will be evaluated for inclusion in the architecture and for resources. Details on TENCAP programs and SDC operations will be included in future ASMPs.

4. (U) Plan Synopsis

a. (U) General Content. The ASMP defines the initial process for the Army to evaluate and develop capabilities to exploit space and space-related technologies to satisfy Army requirements within existing Army management systems. It reviews considerations essential to the prescribed process, especially threat, legal constraints, and Army space goals and objectives. It provides guidance for development of the Army Space Architecture and assigns tasks necessary to implement this first edition of the ASMP. It mandates that proposed space solutions to Army requirements compete for funding in the budget process along with all other proposed Army expenditures. The ASMP:

(1) (U) Analyzes Soviet space systems threat to US ground forces and provides an Army assessment of Soviet space doctrine, probable capabilities and intent.

(2) (U) Reviews legal limits (space treaties, conventions, and agreements) placed on use of space for military purposes.

(3) (U) Develops ASMP goals and objectives from the Army Space Policy by analyzing how the Army can use space to enhance military capabilities. It mandates use of the Concept Based Requirements System (CBRS) to develop specific requirements consistent with these goals and objectives.

(4) (U) Provides guidance for development of an Army Space Architecture and investment/acquisition strategies as actions to be completed by TRADOC and Army materiel developers.

(5) (U) Assigns tasks to the Army in order to substantially move towards realization of Army space program goals.

b. (U) Army Space Program Goals and Objectives. Goals and objectives for the Army's use of space are derived from the Army Space Policy. They are the cornerstone on which space requirements (Army requirements with space technology solutions), the architecture, and investment/acquisition strategies will be based. ASMP goals and objectives are:

(1) (U) To posture the Army for operations in the space age. The Army must develop training for space operations and prepare itself for an expanded role in space. This will require a cadre of personnel with space expertise and a wide-spread understanding of space throughout operational and field commands. In addition, the Army must also develop concepts and doctrine for the use of space in support of strategic aerospace defense and theater missile defense.

(2) (U) To exploit current space capabilities. The Army must exert influence within the national space community and must plan for increased support to land forces using joint space systems. Requirements of AirLand Battle, its follow-on doctrine, and the Army's future strategic doctrine must be identified and become the basis of Army Space Architecture.

(3) (U) To develop additional space related capabilities based on current shortfalls. To achieve this, the Army must expand its combat developments process to include space assets. Space and Strategic Defense Initiative (SDI) emerging technologies must be exploited. The Army should develop innovative space applications to improve the Army's ability to accomplish its missions while maintaining its ability to support and sustain the associated equipment. Finally, the Army will need a network of Army test and training ranges to support development of Army space doctrine, training, and systems.

c. (U) Requirements. TRADOC will develop the REQUIREMENTS section of future editions of the ASMP. Space will be considered as an operational environment during all Mission Area Analysis (MAA) and Mission Area Development Plan (MADP) processes; the requirements from these processes which may have space technology solutions will become part of the ASMP REQUIREMENTS Section. In the near-term, space solutions to mission area deficiencies will be categorized as:

(1) (U) Reconnaissance, surveillance, and target acquisition (RSTA)/intelligence.

(2) (U) Command, control, and communications.

(3) (U) Missile defense.

(4) (U) Positioning and navigation.

(5) (U) Environmental/geophysical exploitation and monitoring.

d. (U) Army Space Architecture. This will be the heart of the ASMP. The Army Space Architecture will be the integrated blueprint for planning and executing doctrine, training, organizational, and materiel development initiatives necessary to ensure appropriate space solutions to Army battlefield requirements. It will include documentation, in logical sequence, of the essential, space-related tasks required to support successful execution of land combat operations. TRADOC will develop the overall Army Space Architecture and the non-materiel strategies in accordance with established procedures. US Army Materiel Command (AMC), in coordination with other Army materiel developers, will develop the materiel investment strategies. Finally, TRADOC will integrate all of the investment/acquisition strategies into the Army Space Architecture.

e. (U) Implementation.

(1) (U) This first edition of the ASMP assigns tasks not only to complete the plan itself but also to support implementation of the Army Space Policy. The broad categories of tasks assigned are Manning, Training, Plan Execution, and Revision.

(2) (U) To initiate implementation, the Deputy Chief of Staff for Operations and Plans will approve ASMP goals and objectives. Next, the Chief of Staff, Army must approve the overall ASMP. The Army Space Council will resolve conflicts in

executing the ASMP. Finally, the US Army Space Agency will manage the ASMP and its revisions.

f. (U) Initial ASMP Results. Successful completion of IMPLEMENTATION Section tasks will facilitate achievement of Army space goals. In general, initial task accomplishments will:

(1) (U) **Posture the Army for operations in the space age by:**

(a) (U) Identifying Army-wide specific space billet/position requirements to the Office of the Deputy Chief of Staff for Operations and Plans (ODCSOPS) and the Office of the Deputy Chief of Staff for Personnel (ODCSPER) to get authorized spaces into the force structure.

(b) (U) Reviewing, amending, and developing the personnel assessment and long-term career management plan of persons identified or trained as space experts.

(c) (U) Producing a single publication which describes current and planned space capabilities to support Army needs and planning.

(d) (U) Identifying test and evaluation support requirements for Army space efforts so that facilities and equipment will be in place when needed to support the Army space program.

(2) (U) **Exploit current space capabilities by:**

(a) (U) Developing an Army Space Architecture that describes how the Army will enhance strategic, operational, and tactical missions by using space systems.

(b) (U) Capitalizing on joint programs that fulfill Army requirements through the Army component (USASA) of USSPACECOM.

(3) (U) **Develop additional space-related capabilities by:**

(a) (U) Investigating where the Army can achieve personnel or equipment economies of force with space capabilities while maintaining or improving overall land combat power.

(b) (U) Exploring potential solutions to Army requirements through demonstrations of promising space-related technologies.

Section I: INTRODUCTION (U)

A. PURPOSE (U)

(U) The Army Space Master Plan implements the Army Space Policy by establishing the total Army space program. It provides strategy, guidance and taskings to develop and institutionalize Army's exploitation of space capabilities which contribute to successful, efficient execution of Army missions.

B. ARMY SPACE HISTORY (U)

1. (U) Perceptions that space is the sole domain of the Air Force and NASA are changing. USSPACECOM has operational command of Air Force, Navy, and Army components. The Air Force and Navy each have space commands that have formed since 1982. USASA was established provisionally on 1 August 1986 to be the Army's component to USSPACECOM. USASA is the precursor for the US Army Space Command to be discussed later; however, the Army is by no means a newcomer to space activities. See TABLE 1-1.

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TABLE 1-1. (U) ARMY SPACE FIRSTS

- FIRST US WORKING POST-WWII ROCKET (1949)
- FIRST ACTIVE COMMUNICATIONS SATELLITE (JAN 58)
- REDSTONE ROCKET PUT FIRST AMERICAN IN SPACE (ALAN SHEPARD - MAY 61)
- FIRST SUCCESSFUL ICBM INTERCEPTION (JUL 62)
- FIRST SUCCESSFUL ANTI-SATELLITE TEST (MAY 63)
- ESTABLISHED THE TENCAP EFFORT (MAY 75)
- HOMING OVERLAY EXPERIMENT --NON NUCLEAR KILL OF BALLISTIC (SPACE) REENTRY VEHICLE-- (JUN 84)
- HOMING INTERCEPT TECHNOLOGY IN EARLY '70'S LED TO SUCCESSFUL AIR FORCE ASAT TEST (SEP 85)

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2. (U) The Army's involvement in space started at the end of World War II (WWII) when it began to work in earnest on rocket technology with German scientists and technicians. Their efforts

would result in the launching of the world's first multi-stage rocket and the initiation of the first experiments in the launching of primates. The Army produced America's first working postwar rocket. In 1954 the Army initiated Project Orbiter, a program in which the Army's Jet Propulsion Laboratory built a satellite to be launched atop the Redstone rocket. In addition to booster design and development, the Army was also instrumental in the development of satellite systems. These included the world's first active communications satellite in 1958 (Project SCORE), some of the first moon probes, and several geodetic satellites in the SECOR program. Army scientists and engineers were the nucleus around which NASA was formed. The first American astronauts rode into space aboard operational booster systems provided by the Army. The Redstone rocket put Alan Sheppard into space in 1961. Within the strategic defense arena, the first Intercontinental Ballistic Missile intercept was performed by the Army in 1962, and Army scientists and engineers conducted the first anti-satellite demonstration in 1963. Continued research led to the Homing Overlay Experiment in 1984 in which the first direct impact, non-nuclear intercept of an intercontinental ballistic missile was demonstrated.

4. (U) Today, the Army is actively engaged in the development and implementation of Military Satellite Communications networks and systems. This involvement includes the development and procurement of ground terminals used in the worldwide ultra high frequency Fleet Satellite Communications System (FLTSATCOM) and Air Force Satellite Communications System (AFSATCOM); development, procurement, and implementation of terminals and control equipment for the global super high frequency Defense Satellite Communications System; and development and procurement of Single Channel Objective Tactical Terminals to be used in the future extremely high frequency Milstar System. All Military Satellite Communications systems are used to satisfy unique and vital command, control, communications and intelligence requirements validated by the Joint Chiefs of Staff. As Executive Agent for the ground subsystem of Military Satellite Communications systems, the Army is responsible for the life cycle management and support for all equipment it develops and deploys to the field.

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TABLE 1-2. (U) NATIONAL SPACE POLICY GOALS

- STRENGTHEN US SECURITY
- MAINTAIN US SPACE LEADERSHIP
- PROMOTE INTERNATIONAL COOPERATION
- MAINTAIN FREEDOM OF SPACE TO ENHANCE THE SECURITY AND WELFARE OF MANKIND
- EXPAND PRIVATE SECTOR INVOLVEMENT
- OBTAIN ECONOMIC AND SCIENTIFIC BENEFITS

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2. (U) Department of Defense (DOD) Space Policy. The DOD Space Policy supports and amplifies the National Space Policy. Space is recognized as being a medium within which the conduct of military operations can take place, just as on land, at sea, and in the atmosphere, and similarly from which military space

functions of space support, force enhancement, space control and force application can be performed. Defense space policy goals are at TABLE 1-3.

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TABLE 1-3. (U) DEFENSE SPACE POLICY GOALS

- PRIMARY GOAL IS: PROVIDE OPERATIONAL CAPABILITIES TO ENSURE THE US CAN MEET NATIONAL SECURITY OBJECTIVES.
- CONTRIBUTORY GOALS ARE:
  - STRONG AND FORWARD-LOOKING NATIONAL SPACE TECHNOLOGY BASE.
  - HEALTHY SPACE INDUSTRY TO SUPPORT NATIONAL SECURITY
  - SUPPORT TO OUR ALLIES.

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3. (U) DOD space efforts will contribute to the national security objectives by: (1) deterrence, or if necessary, defense against enemy attack; (2) assuring that forces of hostile nations cannot prevent our own use of space; and, (3) enhancing operations of US and Allied forces by space systems.

4. (U) Army Space Policy. The Army Space Policy directs that future Army operational doctrine must capitalize on emerging space capabilities. The policy is consistent with National and DOD space policies and is reproduced below:

- "Since the Sixties, space has become increasingly important to our national interests, joining the traditional land, sea, and air dimensions of National Defense. Space is host to advanced systems critical to this nation's security. Space systems already make essential contributions to AirLand combat operations and can play an even greater role in Army missions. Future Army operational doctrine must capitalize on emerging space capabilities.

- Consistent with National and Department of Defense policies and in cooperation with other Services and agencies, the Department of the Army will exploit space activities that contribute to the successful execution of Army missions. The Army supports assured access to space and will use space capabilities to enhance the accomplishment of strategic, operational, and tactical missions.

- Successful implementation of this policy will require development of a pool of Army space expertise and judicious planning, to include development of concepts, requirements and a long-term management strategy. Army plans and evolving space architecture must capitalize on national and joint programs, preserving options to support initiatives that fulfill Army requirements. Implementation of this policy demands a visionary outlook to exploit fully evolving space capabilities."

5. Army Space Master Plan (U)

a. (U) The ASMP is the base document for space program planning and for the execution of the Army Space Policy. It is the product of an iterative process and will mature over time into the blueprint for the Army's use of space. Most importantly, it establishes responsibilities and issues taskings. USASA is responsible for developing, maintaining, coordinating and managing the ASMP. The Chief of Staff, Army is the approving authority.

b. (U) The ASMP will be integrated into Army near, mid, and long range planning documents and the CBRS, and it will have an impact on the Planning, Programming, Budgeting, and Execution System.

D. ORGANIZATION FOR ARMY SPACE ACTIVITIES (U)

(U) The Army staff and major Army commands will perform their traditional roles in support of space activities. A diagram of space organizations with specific space responsibilities is at FIGURE 1-1. Relationships/ interactions of Army organizations and staff elements and their roles and missions will continue to develop as Army space activities evolve. Present relationships, roles and missions are:

1. (U) The Chief of Staff, Army (CSA) directs all Army space activities through the Vice Chief of Staff, Army (VCSA).

2. (U) The VCSA is chairman of the Army Space Council.

3. (U) Army Space Council:

a. (U) Is a continuing Headquarters, Department of the Army (HQDA) departmental committee directed by CSA.

b. (U) Provides policy recommendations and guidance for Army space-related activities through the CSA to the Secretary of the Army. In particular, the Army Space Council will recommend policy and guidance on the:

(1) (U) Army's current role and activities in space.

(2) (U) Army's future role in and organization for space.

(3) (U) Army's role in the unified USSPACECOM.

(4) (U) Other Army space-related requirements, as appropriate, to include:

- Doctrine.
- Communications information.
- Intelligence.
- Weapons systems.
- Defense.
- Research and development.

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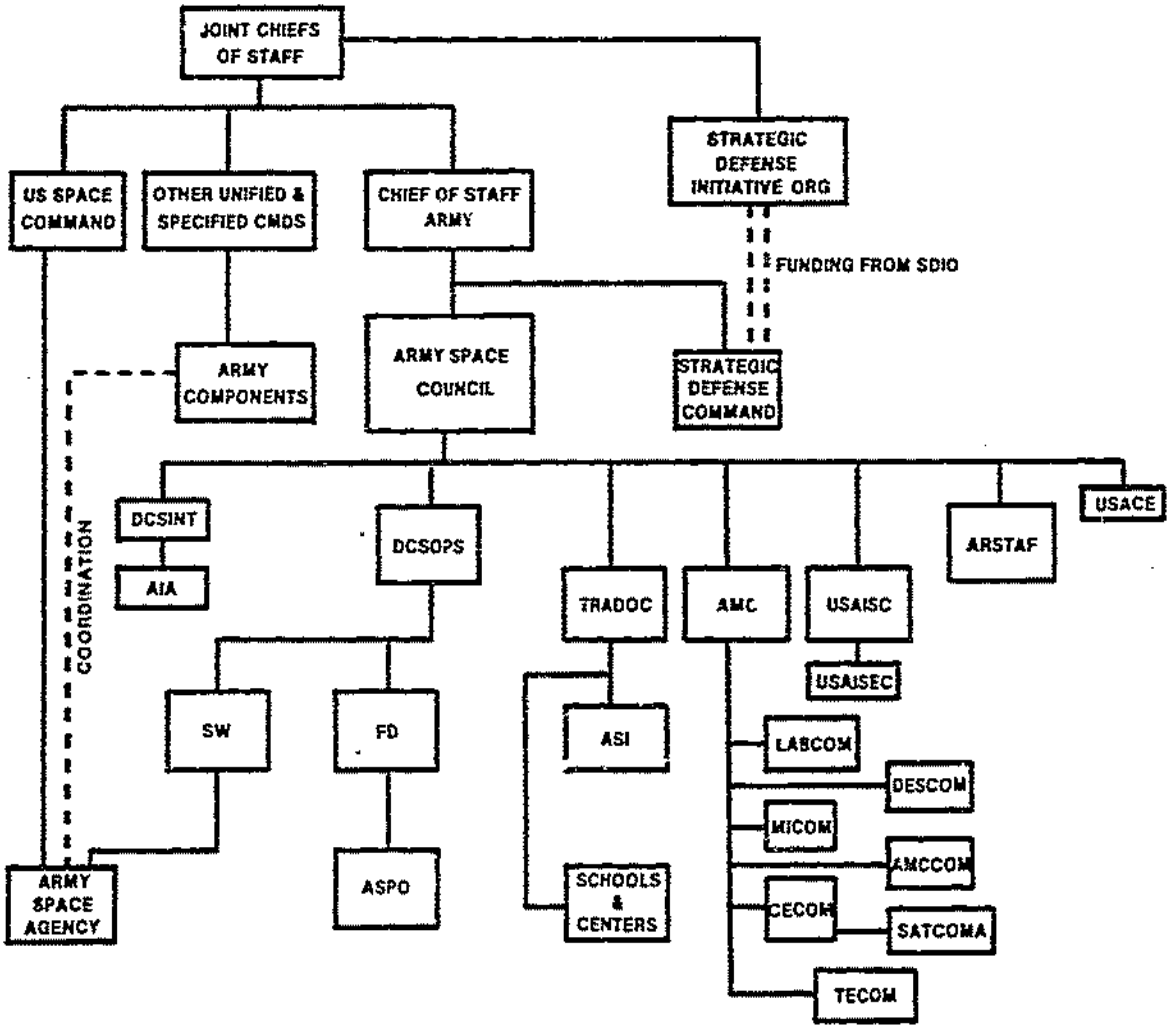

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FIGURE 1-1 (U) ARMY ORGANIZATIONS FOR SPACE

c. (U) Is composed of representatives from selected Army Staff agencies, field operating agencies, and Major Commands (MACOMs) as follows:

(1) (U) Chairman. The Vice Chief of Staff, US Army.

(2) (U) Members. The following members will serve on the council:

- Assistant Secretary of the Army (Research, Development, and Acquisition).

- Deputy Chief of Staff for Operations and Plans.

- Deputy Chief of Staff for Personnel.

- Deputy Chief of Staff for Logistics.

- Deputy Chief of Staff for Intelligence (DCSINT).

- Chief of Engineers.

- Director, Program Analysis and Evaluation.

- Commander, Strategic Defense Command.

- General officer, or equivalent, US Army Training and Doctrine Command.

- General officer, or equivalent, US Army Materiel Command.

- General officer, or equivalent, US Army Information Systems Command.

(3) (U) Observers. Other major and operational commands will serve as observers as required.

d. (U) Resolves conflicts in execution of the ASMP.

e. (U) Approves the Army Space Architecture.

4. (U) Deputy Chief of Staff for Operations and Plans:

a. (U) Is the principal advisor to the CSA for space-related Joint and national security matters.

b. (U) Is the Army Staff focal point of Army Space activities.

c. (U) Provides the Executive Secretary for the Army Space Council.

d. (U) Provides the chairman for the Army Space Working Group, a formal working group that gives staff presentations and recommendations to the Army Space Council.

e. (U) Provides staff supervision over the USASA and ASPO - field operating agencies of the Army Staff.

f. (U) Sponsors space studies and develops space plans.

5. (U) Deputy Chief of Staff for Intelligence:

a. (U) Has Army Staff responsibility for reconnaissance and surveillance, meteorology/environmental sciences and topography.

b. (U) Represents the Army on the Defense Reconnaissance Support Program.

c. (U) Is a member of the TENCAP General Officer Steering Committee.

d. (U) Supervises the Army Intelligence Agency (AIA), a field operating agency commanded by the Deputy Assistant Chief of Staff for Intelligence.

6. (U) US Army Strategic Defense Command:

a. (U) Is a Research and Technology development activity organized as a Field Operating Agency of the Office of the CSA. Its mission is to:

(1) (U) conduct a coordinated research program, in accordance with Defense, Strategic Defense Initiative, and Army guidance, which ensures a timely energetic and cost effective development of mature and revolutionary technologies for defense against ballistic missiles;

(2) (U) coordinate all Army Anti-Tactical Ballistic Missile techbase development to maximize benefits for Strategic Defense and Anti-Tactical Missile programs;

(3) (U) ensure efforts of the Army SDC and Program Manager, Ballistic Missile Defense are in compliance with applicable international treaties and Presidential and National Security Directives;

(4) (U) manage the Kwajalein Missile Range as a National Range.

b. (U) SDC functions include:

(1) (U) Serving as single point of contact in the Army for Strategic Defense Initiative matters and exercises Department of the Army executive authority over the Army Strategic Defense Initiative efforts, the Army Ballistic Missile Defense Program, and the resources made available for their accomplishment.

(2) (U) Coordinating with respective Army Staff agencies within their functional area(s) of assigned staff cognizance to permit agencies to supervise the execution and implementation of Army directives and programs.

(3) (U) Discharging the Strategic Defense Initiative Organization role in close coordination with appropriate Army Staff agencies within their functional area of responsibility.

(4) (U) Preparing necessary plans and provides direction to permit execution of the Ballistic Missile Defense program within guidance issued by CSA and in collaboration/ coordination with appropriate ARSTAF agencies and will assure preparation and publication of directives pertaining to tasks assigned to participating DA organizations.

7. (U) Chief, Corps of Engineers:

a. (U) Is a materiel developer in support of the Army space program.

b. (U) Is the combat developer for ground systems which exploit earth sciences data gathered by space based sensors.

c. (U) Conducts Research, Development, Test, and Evaluation (6.1 - 6.4) in areas of:

(1) (U) Reduction of data acquired from space for:

- Mapping, Charting, and Geodesy (MC&G) including positioning and targeting acquisition

- Military Intelligence (MI)

- Terrain analysis

- Other terrestrial sciences.

(2) (U) Definition of sensor systems requirements for acquisition of data for MC&G, MI, terrain analysis, and other terrestrial sciences.

d. (U) Develops ground processing systems for utilization of data acquired from space systems.

e. (U) Develops techniques for construction of large space structures in space.

f. (U) Conducts Research, Development, Test, and Evaluation in concepts and techniques for construction on planetary bodies.

8. (U) US Army Information Systems Command (USAISC).

a. (U) The USAISC missions, functions, and responsibilities include the operation and maintenance of ground based satellite communications terminals, both strategic and tactical; operation and maintenance of ground based satellite communications network control; construction of associated facilities; responsibility for the Army's part of the Defense Communications System; and Army's strategic and sustaining base responsibilities. USAISC has operational and combat developer missions. USAISC also has the unique mission of materiel developer for the Army's portion of the Defense Communications System: base communications and information systems. Many space initiatives will cross these mission areas.

b. (U) Specific space related missions are to:

(1) (U) Design and implement assigned information systems in accordance with the approved Army information architecture.

(2) (U) Plan, engineer, acquire, install, test, operate, and maintain assigned Army information systems and facilities to include the Army's part of the Defense Communications System.

(3) (U) Solicit, evaluate, select, and acquire automated information systems, to include automation and communications software, hardware, maintenance and services. This includes the Army Reserve and Army National Guard.

(4) (U) Conduct combat developments for Defense Communications Systems and Army systems as assigned.

(5) (U) Serve as a materiel developer and acquisition agent, in coordination with the Army Materiel Command, for assigned systems and equipment.

(6) (U) Conduct development and user and follow-on evaluation tests for equipment and systems applicable to USAISC's mission as a participant in materiel acquisition.

(7) (U) Conduct other development activities for base communications and assigned Army communications.

(8) (U) Develop and recommend policy and procedures for Army-wide information systems within the scope of Army regulations and DOD, Defense Communications System, and the Defense Communications Agency policy for the operations of Defense Communications System and Army communications systems.

(9) (U) Provide information network support to the Joint Chiefs of Staff, the Chief of Staff of the Army, and unified and specified commanders during contingency and emergency operations and to state and federal agencies during civil disturbance or natural disaster operations, as assigned.

(10) (U) Provide Army information systems above corps level not assigned by Headquarters Department of the Army to other commands and agencies.

(11) (U) Serve as a member of the Army Space Council.

9. (U) United States Army Satellite Communications Agency:

a. (U) Is a subordinate command of Communications and Electronics Command, AMC. Its mission is to provide engineering, design, integrated logistics and test support during development and acquisition of the Defense Satellite Communications System, Milstar, and Ground Mobile Forces/Tactical Satellite Communications System (GMF/TACSATCOM), ground terminals, and control equipment; system planning, engineering, and design of the GMF/TACSATCOM system; operation and maintenance of the Defense Satellite Communications Integrated Test Facility; and world-wide field engineering services.

b. (U) Its major functions are to:

(1) (U) Act as Project Manager, Satellite Communications for the ground segment portion of the system for the Tri-Services.

(2) (U) Plan, direct and control tasks and associated resources involved in discharging Army responsibilities relative to providing earth terminals and control equipment for tactical (GMF/TACSATCOM, Milstar) and strategic satellite communication systems such as the Defense Satellite Communications System, satellite navigation systems Global Positioning System, and special satellite communications projects.

(3) (U) Manage all phases of research and development, engineering, procurement, installation, and logistics support of satellite communication ground terminals.

(4) (U) Coordinate with, and direct efforts of, appropriate AMC subordinate commands.

(5) (U) Coordinate appropriate action with other military departments, Government agencies, North Atlantic Treaty Organization, and industry.

10. (U) US Army Space Agency:

a. (U) Is the precursor to a space operational command. Its mission is to:

(1) (U) Serve as the Army component to USSPACECOM.

(2) (U) provide USSPACECOM an Army perspective in planning for DOD space system support to land forces and for strategic defense.

(3) (U) ensure integration of Army requirements into USSPACECOM planning and operations.

(4) (U) respond to United States Commander-in-Chief Space (USCINCSPACE) taskings, to include preparing to provide operational forces, as appropriate.

b. (U) The Agency is responsible for the following functions:

(1) (U) Serve as focal point for Army operational space support, including assisting Army forces in coordinating requests for DOD space system support and assisting in development of operational concepts using space systems.

(2) (U) Maintain and coordinate the ASMP.

(3) (U) Integrate Army Planning, Programming, Budgeting and Execution System input for space-related programs into USCINCSPACE's annual planning and programming input to the Joint Staff.

(4) (U) Represent Army interests in development of space-related strategic defense planning.

(5) (U) Investigate and report to appropriate Army organizations on space-related technology research and development programs of other Services and DOD activities which may apply to mission requirements of Army forces.

(6) (U) Improve Army awareness of space support capabilities and assist Army forces in planning use of space

support in Concept Plans, Operations Plans, and Tactical Standing Operating Procedures.

11. (U) US Army Space Institute:

a. (U) Is a TRADOC organization.

b. (U) Is the specified and personnel proponent for space and represents the Army Space User in the Concept Based Requirements System

c. (U) Represents the Army user community in the Concept Based Requirements System for the development and integration of space-related concepts and doctrine across mission areas.

d. (U) Assists proponent centers and schools in defining space-related doctrine, training, organizational and materiel requirements.

e. (U) In conjunction with TRADOC centers and schools, develops and disseminates space concepts, doctrine, techniques, and procedures describing the application of space systems and technology to land warfare.

f. (U) Has management responsibilities for skill code . 3Y (space activities).

g. (U) Develops, maintains, coordinates, and manages the Army Space Architecture.

12. (U) US Army Space Program Office:

a. (U) Is a Field Operating Agency of the Office of the Deputy Chief of Staff for Operations and Plans.

b. (U) Serves as the authorized technical and fiscal interface between the Army TENCAP Program, the national program, and other program offices executing the TENCAP program.

c. (U) Is responsible for the execution of the Army TENCAP Program.

d. (U) Is responsible for the development, coordination, and maintenance of the TENCAP Master Plan.

e. (U) Is to develop TENCAP systems to meet the needs of the tactical commander.

f. (U) Is responsible for the coordination of TENCAP related efforts with other Army space organizational elements.

g. (U) Has detailed objectives as follows:

(1) (U) To task National/Theater assets.

(a) (U) Assist in the development and coordination of concepts and procedures by which tactical commanders can quickly task National/Theater assets to provide coverage of their area of operations.

(b) (U) Assist in obtaining approval at the national level for Army tactical use of selected National/Theater assets.

(c) (U) Develop the capability for Army commanders to task National/Theater assets when required.

(2) (U) To exploit National/Theater assets.

(a) (U) Develop the capability to provide timely and tailored exploitation support of data from National/Theater assets to the tactical commander.

(b) (U) Demonstrate and assess the system performance, utility, and supplemental effectiveness of tactical exploitation of National/Theater assets by planning and participating in special project exercises/evaluations.

(c) (U) Participate in the design of National/Theater assets to minimize the size of tactical exploitation processing equipment by emphasizing spacecraft and/or mission ground station processing. In cases where this imposes an inordinate delay in the receipt of the data, or when Army unique processing is required to sort, relay, extract, correlate, or report data; and develop the capability to do so.

(d) (U) Evaluate current National/Theater assets to meet TENCAP users requirements. Should evaluations dictate the need for systems modifications or development, recommend changes to the systems and request funds through Army budget if appropriate.

(3) (U) To disseminate products from National and Theater Assets.

(a) (U) Determine TENCAP communications systems requirements to provide timely and properly classified information from National/Theater assets to the tactical user.

(b) (U) Plan, program, implement, and manage required communications support for the TENCAP program.

E. US ARMY SPACE COMMAND (U)

(U) The Office of the Deputy Chief of Staff for Operations and Plans is investigating the mission and functions of a follow-on command to the US Army Space Agency. The US Army Space Command will evolve from USASA and be the Army's space major operational command and component to USSPACECOM. The Army Space Command will be the primary focal point for Army space operations and planning. The Army Space Command will be the major operational conduit through which the Army executes its responsibilities from the Joint Chief of Staff Publication 2, Unified Action Armed Forces. The Army Space Command's mission could include:

1. (U) Integrating Army requirements for space system support into USSPACECOM planning.

2. (U) Developing Army space operations plans.

3. (U) Operating assigned space systems in support of Army and joint space programs.

4. (U) Providing Army space systems support to Unified commanders-in-chief and their land forces.

5. (U) Providing the Army perspective on planning for strategic defense to USCINCSPACE.

6. (U) Command assigned Army space forces.

Section II: THREAT (U)

B. SOVIET PHOTORECONNAISSANCE SATELLITES (U)

1. (U) HIRES-2

2. (U) MEDRES

3. (U) IMSAT (NRT)

4. (U) PHOTOGEO-2

5. (U) ERPHO

C. SOVIET ELINT SATELLITES (U)

Section III: INTERNATIONAL SPACE LAW (U)

A. INTRODUCTION (U)

(U) The environment of space is regulated in a manner similar to that of international waters through law, treaties, and conventions. National space policy, in recognition of national security requirements, provides the basis for a strong military space program consistent with international law. This section synopsizes international space laws and agreements. Department of Defense and Army Space policies are discussed later in Section IV. The Office of The Judge Advocate General shall develop the international law portion of the ASMP for inclusion in future iterations of this plan. Under current international law, the US retains wide latitude to exploit space for nonaggressive military applications in peacetime. During a period of hostilities, the scope of permissible military activities in space is significantly broadened. For planning purposes, it is essential to recognize and appreciate the distinction between legal prohibitions during peacetime and the suspension of practically all such prohibitions during periods of hostilities.

B. INTERNATIONAL LAW (U)

(U) Formal limitations and controls on the military use of space are embodied in a small number of treaties, the charter of the United Nations, and customary international law. Excerpts and opinions concerning the areas listed below are contained at Appendix A:

1. (U) Treaty on Principles Governing the Activities of States in the Exploration and use of Outer Space, including the Moon and other Celestial Bodies (Outer Space Treaty). It contains several provisions relevant to a military presence in space:

a. (U) Article IV prohibits the orbiting around the earth, stationing in outer space, or installation on celestial bodies of nuclear weapons or any other kinds of weapons of mass destruction. A "weapon of mass destruction" includes nuclear, chemical, biological/bacteriological, and any other weapon capable of wreaking destruction such as that caused by a nuclear weapon. The testing, orbiting, or stationing of conventional weapons in outer space is not prohibited.

b. (U) Article IV also prohibits, on the moon and other celestial bodies, the establishment of military bases, installations, and fortifications; testing of any type of weapon; and the conduct of military maneuvers. Military personnel may be used on the moon and other celestial bodies for scientific

research or for any other peaceful purposes. The US has consistently interpreted "peaceful purposes" to mean nonaggressive rather than nonmilitary.

c. (U) The Outer Space Treaty adopts the principles of national self-defense. This right may be exercised not only in response to an actual armed attack, but also to remove a threat of imminent armed attack.

d. (U) Article XII recognizes the reciprocal opportunity of parties to inspect all stations, installations, equipment, and space vehicles on the moon and other celestial bodies. Physical inspection of space vehicles in orbit is not provided for in the treaty.

2. (U) Agreement on the Rescue of Astronauts, the Return of Astronauts, and the Return of Objects Launched into Outer Space. The agreement provides for the aid, rescue, and return of spacecraft personnel, military or civilian. In periods of armed hostilities, the law of war would replace this treaty with the ultimate disposition of the astronauts determined under 1949 Geneva Conventions. Any DOD space system that falls from orbit outside the US, while not protected from compromise, must be returned to the US.

3. (U) Convention on Registration of Objects Launched into Outer Space. For all space objects launched into "earth orbit or beyond," the following information must be furnished, "as soon as practicable," to the Secretary General of the United Nations:

a. (U) Name of launching states.

b. (U) Appropriate designate or registration number.

c. (U) Date and place of launch.

d. (U) Basic orbital parameters.

e. (U) General function of the space object.

4. (U) Convention on International Liability for Damage Caused by Space Objects. Convention is specifically designed to establish principles of liability and compensation for damage caused by space objects.

5. (U) Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space, and Under Water (Limited Test Ban Treaty). This treaty bans any and all nuclear explosions in outer space. A violation of the treaty would not occur in cases of accidental nuclear explosions, for example, those involving a nuclear-powered space object.

6. (U) Convention on the Prohibition of Military or Any Other Hostile Use of Environmental Modification Techniques (Environmental Modification (EnMod) Convention). The EnMod Convention prohibits military or other hostile use of "environmental modification techniques" as the means of destruction, damage, or injury to any other State Party, if such usage has widespread (several hundred square kilometer area), long-lasting (several months or approximately a season), and severe effects (serious or significant disruption or harm to human life, natural and economic resources, or other assets). The convention does not restrict research, development, and testing of environmental modification techniques, nor does it affect the right of reprisal in kind that exists under customary international law.

8. (U) The International Telecommunications Convention provides that states retain entire freedom with regard to military radio installations of their forces. However, so far as possible, measures must be taken to prevent harmful interference from the earth or in space.

9. (U) The agreement between the US and USSR to reduce the risk of nuclear war provides that notice will be given of detections of unidentified objects or of warning system interference when such occurrences could create a risk of nuclear

war. Each party must provide notice to the other of launches which will extend beyond its national territory in the direction of the other party.

C. INTERNATIONAL LAW DURING HOSTILITIES (U)

(U) There is general agreement within the international community that the outbreak of hostilities does not ipso facto terminate all treaties. The effect of hostilities depends on a treaty's nature, terms, and subject matter. An intention that a Treaty be suspended, terminated, or remain in force during hostilities is followed where it is clearly expressed in the treaty. Most treaties, however, do not contain such expressed provisions. The ABM and Limited Test Ban treaties contain no provisions regarding continuation during hostilities and would be immediately suspended or terminated as incompatible with national security.

Section IV: MILITARY USE OF SPACE (U)

A. INTRODUCTION (U)

(U) Space systems greatly increase the Army's ability to perform its critical tasks, TABLE 4-1. This section provides a discussion of current Joint Chiefs of Staff and Army guidance as well as an overview of the Operational Concept for Army Space Operations. These, in turn, provide the foundation for Army space applications and lead to the development of Army goals and objectives. They also establish the basis upon which requirements can be expressed and architectures and investment strategies created to implement the Army Space Policy. The lead agencies identified, and the actions required to further the Army's efforts to accomplish these goals and objectives are listed in section VII, IMPLEMENTATION.

UNCLASSIFIED

TABLE 4-1. CRITICAL TASKS

- ENHANCE THE PERFORMANCE OF INDIVIDUAL SOLDIERS AND BATTLEFIELD LEADERS.
- ENHANCE JOINT AND COMBINED OPERATIONAL CAPABILITIES.
- ENHANCE THE PRODUCTIVITY OF UNITS.
- ACHIEVE SYNCHRONIZATION OF THE BATTLEFIELD.
- FIELD A DEEP ATTACK CAPABILITY.
- FIELD A CAPABILITY TO DEFEAT ADVANCED SOVIET ARMOR.
- ACHIEVE MODERN BATTLEFIELD SUSTAINMENT CAPABILITY.

UNCLASSIFIED

B. UNIFIED ACTION ARMED FORCES (JCS PUB 2) (U)

1. (U) JCS Pub 2 gives the Army additional responsibilities for operations in the space environment. It reinforces major Army vectors to fight and sustain as part of Joint and Combined Forces, to develop and exploit high technology and productivity enhancements, and to improve tactical and strategic deployability. JCS Pub 2 requires the Army:

a. (U) To organize, train, equip, and provide forces for appropriate air and missile defense and space control operations,

including the provision of forces as required for the strategic defense of the United States, in accordance with joint doctrines.

b. (U) To organize, equip, and provide Army forces, in coordination with other Military Services, for joint amphibious, airborne, and space operations and to provide for the training of such forces, in accordance with joint doctrines.

2. (U) With respect to space operations, JCS Pub 2 gives the Army specific responsibility for the following:

a. (U) Organizing, training, equipping, and providing Army forces to support space operations.

b. (U) Developing in coordination with the other Military Services, tactics, techniques, and equipment employed by Army forces for use in space operations.

c. (U) Conducting individual and unit training of Army space operations forces.

d. (U) Participating with other Services in joint space operations, training, and exercises as mutually agreed to by the Services concerned or as directed by competent authority.

e. (U) Providing forces for space support operations for the Department of Defense when directed.

C. ARMY GUIDANCE (U)

1. (U) Army Guidance documents emphasize and resolve to take advantage of space capabilities, space systems and space-related technologies and to exploit their use. The major documents guiding near, mid, and far term planning are addressed here.

a. (U) In the near term, the Army Posture Statement (FY82) addresses the Army in space. It accentuates the personnel and mission enhancing required capabilities expressed in the Army Space Policy: (1) While there is a shortfall in the availability of fully qualified personnel to fill the rapidly expanding requirements for Army space-related expertise, a concerted effort is ongoing to ensure a pool of qualified officer and civilian personnel exists to meet requirements; and, (2) the Army must continue to ensure that its needs for support of AirLand Battle are incorporated during development of joint-service and DOD space systems. USASA will have operations responsibilities, operational advocacy functions, and develop objectives for the Army space program. These and other efforts are either underway or have been recently completed. This master plan reinforces the endeavor to resolve these two issues.

b. (U) In the mid term, The Army Plan (1988-2002) has an objective to plan for space related organizations that provide for Army involvement in the USSPACECOM, and for space planning, research, development, and acquisition activities. In fact, the Army is doing this now with USASA as the Army component to USSPACECOM and other Army agencies working in the development, planning, and acquisition arenas.

D. ARMY SPACE OPERATIONAL CONCEPT (U)

1. (U) TRADOC's Operational Concept for Army Space Operations is consistent with Army guidance. It is the basis for doctrine, training, organizational structure, and materiel acquisition efforts in support of Army space operations. The concept provides the connectivity between Army missions, space policy, and AirLand Battle Doctrine. The key elements of the concept are as follows:

a. (U) Space operations are a logical extension of the battlefield.

b. (U) Space systems offer the commander a substantial increase in operational capabilities.

c. (U) Space control and use are directly linked to success on the terrestrial battlefield.

d. (U) Space-based command and control systems could provide the means for true battlefield synchronization of all combat functions.

e. (U) Space provides a unique view of the battlefield that offers the commander significant operational and tactical advantages.

f. (U) Space-basing provides potential security advantages in support of all combat functions.

2. (U) AirLand Battle and emerging future doctrine are founded on four fundamental tenets: initiative, agility, depth, and synchronization. The extension of the land battle into the environment of space gives the commander improved capabilities to apply these tenets. The following descriptions of <u>future</u> space capabilities are excerpts from the Army Space Operational Concept and present a quick view of why the space environment is important to the Army.

b. (U) Agility. Mobile terminals provide commanders real-time information on the location and status of their units' and the disposition of enemy forces. Space systems which monitor terrestrial environmental conditions provide commanders current information on local terrain and weather conditions. Space systems are designed to give commanders the ability to see the enemy, project his intent, and simultaneously direct friendly combat units, increasing maneuver speed.

d. (U) Synchronization. The responsiveness and broad area coverage of space systems offer units rapid access to, and sharing of, information in a variety of ways that are not possible with ground or airborne systems. This information facilitates sound decisions on what resources should be committed

and when they should be committed. Space systems enable commanders to synchronize diverse capabilities. Integrated multicapable systems decrease the need for specialization on the battlefield. Thus, space systems should be designed to simplify the task of synchronization by integrating and performing many tasks currently accomplished by separate elements.

3. (U) Utilization of the space environment is important in the Spectrum of Conflict. The following is excerpted from the Army Space Operational Concept.

a. (U) High-Intensity Conflict. Waged between superpowers, this level of conflict includes the potential employment of nuclear, chemical, and biological weapons as well as the use of high technology weapons such as directed energy systems. While high intensity conflict is the least likely form of war, it is the most catastrophic. The extreme level of violence and global scope of conflict at this level places national survival in jeopardy. The threat of high intensity conflict mandates a constant state of readiness during peacetime and the immediate projection of effective combat power at the onset of war. Peacetime requirements for a high state of readiness, the global scope of high intensity conflict, and the extreme levels of violence associated with superpower capabilities stretch conventional means of observation, early warning, communications, transportation, and projection of combat power to the limit. Extending the global battlefield into space provides an enhancement of conventional capabilities in these areas. Because of the key role space systems play on the high-intensity battlefield, they are high priority targets. Systems must be developed and employed in ways to ensure their survivability and availability at the critical place and time. Concurrently, threat systems must be negated to deny their use to the enemy.

b. (U) Mid-Intensity Conflict. Warfare at the mid-intensity level involves confrontation against conventional regular forces of hostile regional powers. While the stakes of this conflict level do not encompass survival of our nation, vital national interests are threatened. Also, while the scope of mid-intensity conflict is limited, the growing proliferation of advanced weapons and technology enables an increasing number of countries to use extremely lethal systems. In the foreseeable future, however, only a limited number of nations will have the capability to employ, or attack, significant space systems. Against most regional powers these systems offer a profound advantage: they provide a powerful, relatively secure platform for influencing battle.

c. (U) Low-Intensity Conflict.

(1) (U) This level of conflict is the least catastrophic but most likely form of warfare. Operations in the low-intensity environment consist of peacekeeping operations, foreign internal defense, peacetime contingency operations, and terrorism counteraction to achieve political, military, social, economic, or psychological objectives. The limited resources of opposing forces or the mutual desire to avoid expansion of intensity results in constraints on geographic area, weapons, tactics, and level of violence.

E. CURRENT AND PROJECTED SPACE CAPABILITIES (U)

(U) There is no single publication giving a description of current and projected space capabilities. A publication of this nature will assist the Army in requirements definition and resolution, combat and materiel development, and operations. USASA will develop, periodically update, and distribute it for Army use. It is recognized that this information will be difficult to derive and more suitable for multiple volumes. Therefore, initial editions may not be all inclusive.

F. ARMY SPACE PROGRAM GOALS AND OBJECTIVES (U)

(U) The ASMP develops Army space program goals and objectives based upon the Army Space Policy. These goals and objectives establish the cornerstone upon which space requirements (Army requirements with space technology solutions), architecture, and investment/ acquisition strategies will be built. See TABLE 4-2.

TABLE 4-2. (U) ARMY SPACE PROGRAM GOALS AND OBJECTIVES

GOALS

- (U) POSTURE THE ARMY FOR OPERATIONS IN THE SPACE AGE.
- (U) EXPLOIT CURRENT SPACE CAPABILITIES IN SUPPORT OF AIRLAND BATTLE DOCTRINE.
- (U) DEVELOP ADDITIONAL ESSENTIAL SPACE-RELATED CAPABILITIES.

OBJECTIVES

- (U) DEVELOP ARMY SPACE EXPERTISE.
- (U) DEVELOP DOCTRINE AND EMPLOY SPACE CAPABILITIES TO ENHANCE THE ACCOMPLISHMENT OF ARMY STRATEGIC, OPERATIONAL, AND TACTICAL LEVELS OF WAR MISSIONS ACROSS THE SPECTRUM OF CONFLICT.
- (U) PARTICIPATE IN APPROPRIATE JOINT SPACE PROGRAMS THAT FULFILL ARMY REQUIREMENTS.
- (U) DEVELOP INNOVATIVE SPACE APPLICATIONS TO IMPROVE THE ARMY'S ABILITY TO ACCOMPLISH ITS STRATEGIC, OPERATIONAL, AND TACTICAL MISSIONS.
- (U) INSURE TOTAL SPACE SYSTEMS SUSTAINABILITY AND SUPPORTABILITY THROUGH UP-FRONT SUPPORTABILITY ANALYSIS.
- (U) IMPROVE ARMY TEST AND TRAINING RANGE CAPABILITIES IN SUPPORT OF ARMY SPACE SYSTEMS AND APPLICATIONS.

1. (U) ASMP goals are:

a. (U) To posture the Army for operations in the space age. The nation is expanding its capabilities in space. In the years to come, space will become more and more accessible, and space systems will become more predominant and more numerous. Manned space activities will be more common. The space age will come whether the Army participates or not. The Army must begin to organize itself to be able to participate in the space age and capitalize on increased capabilities. The Army must establish concepts and doctrine for space operations. The Army must also prepare itself for an expanded role in space. To accomplish this will require a cadre with space expertise and a wide spread understanding within the operational and field commands. The Army must also develop concepts and doctrine for the use of space in support of strategic defense and tactical missile defense. Commanders must see an extended battlefield, analyze battlefield dynamics, and consistently move inside the decision cycle of the threat regardless of echelon.

c. (U) To develop additional space related capabilities based on current shortfalls. To achieve this, the Army must expand its combat developments process to include space assets. Space and Strategic Defense Initiative emerging technologies need to be exploited.

2. (U) ASMP objectives are:

a. (U) To develop Army space expertise. As a minimum, the Army must have its own well qualified space staffs and operational forces for space planning and operations. Positions need to be identified within the total Army where space expertise is needed. Additional education and training need to be developed and given to the planned force.

b. (U) To develop doctrine and employ space capabilities to enhance the accomplishment of Army missions in strategic, operational, and tactical levels of war. Requirements of AirLand Battle, its follow-on doctrine, and the Army's future strategic doctrine need to be identified and become the basis of an Army Space Architecture.

c. (U) To participate in joint space programs that fulfill Army requirements. The Army must capitalize on appropriate joint space programs in order to leverage Army investments and economize on expenditures.

e. (U) To develop innovative space applications to improve the Army's ability to accomplish its missions. The proponents for Army Mission Areas need to record, categorize, and report those requirements which have no apparent solutions in the MADP, so that they can be investigated for potential solution by space technology. As a minimum, unresolved deficiencies from the MAA process needs to be catalogued. The Army must capitalize on technologies emerging from SDI funded research and development technologies. The SDI program is a research and development program whose products could have significant impact on enhancing space capabilities which can be applied to many requirements other than Ballistic Missile Defense.

f. (U) To ensure that space system development addresses system sustainability and supportability through "up-front" supportability analysis. Supportability is essential in any space technology developments. Because supportability represents such a major share of projected system life cycle costs and directly affects both affordability and total system effectiveness, we must give consideration to this question early in system development. Furthermore if technological developments are required to meet support requirements, they can be identified early in project life.

g. (U) To develop new and improved Army test and training range capabilities so that future Army space systems can be tested and implemented on a timely basis. A network of Army test and training ranges is required to support development of Army space systems, doctrine and tactics. We need range instrumentation, control, and communications systems to provide responsive and cost-effective support for Army space programs.

Section V: REQUIREMENTS (U)

A. INTRODUCTION (U)

1. (U) In future editions, this section will list those Army warfighting requirements throughout the conflict spectrum that potentially can be satisfied by space systems. This edition establishes categories in which these requirements are expected to fall. Some undeveloped sample requirements were derived from a document search and placed within the categories to stimulate Army-wide space thinking and assist Army Space Architecture building. The Army Space Policy, Battlefield Development Plan, Army Space Operational Concept, and various other documents were reviewed to develop this initial list. These candidate requirements are not the end product of this plan nor are they all validated. Rather, they are a starting point for the iterative process of the ASMP. TRADOC will validate the space operational requirements as the space architecture process proceeds and forward them to HQDA for approval.

B. SPACE - AN OPERATIONAL ENVIRONMENT (U)

(U) TRADOC has established space as an operational environment in order to include it in the CBRS. As a part of revisions to the CBRS, space is categorized as one of several operational environments. This ensures that space is considered in each MAA and resulting CBRS documentation, e.g., MADP and Mission Area Materiel Plan.

TABLE 5-1. (U) FUTURE ARMY SPACE OPERATIONAL REQUIREMENTS CATEGORIES

GENERALLY, ARMY SPACE OPERATIONAL REQUIREMENTS WILL FALL INTO THE FOLLOWING CATEGORIES:

- (U) RECONNAISSANCE, SURVEILLANCE, AND TARGET ACQUISITION/INTELLIGENCE
- (U) COMMAND, CONTROL, AND COMMUNICATIONS
- (U) MISSILE DEFENSE
- (U) POSITIONING AND NAVIGATION
- (U) SPACE SURVEILLANCE
- (U) SPACE OFFENSE
- (U) SPACE DEFENSE
- (U) PERSONNEL

- (U) TOTAL SYSTEM SUPPORTABILITY AND SUSTAINMENT
- (U) ENVIRONMENTAL/GEOPHYSICAL EXPLOITATION AND MONITORING
- (U) HIGH TECHNOLOGY AND MEDICINE
- (U) CONSTRUCTION TECHNOLOGY AND MATERIALS, STRUCTURAL HARDENING, FIXED FACILITY CAMOUFLAGE
- (U) TEST AND EVALUATION

C. SPACE OPERATIONS REQUIREMENTS (U)

1. (U) The paragrapns to follow briefly describe some candidate space operations requirements that fall within the categories listed at TABLE 5-1.

a. (U) RSTA/Intelligence.

- (U) Provide timely and accurate deep intelligence and targeting needs to tactical and operational level commanders.

b. (U) Command, Control, and Communications.

- (U) Provide fixed and mobile command and control facilities to support the operational management of Army space capabilities.

- (U) Provide rapid, reliable, effective jam resistant communications for Army commanders as well as the National Command Authority and the Defense Communications System.

- (U) Provide realistic and comparatively inexpensive training to Army forces through intertheater data links.

c. (U) Missile Defense.

d. (U) Position and Navigation.

- (U) Provide rapid access to precise position, azimuth, and elevation data to Army forces.

- (U) Provide an improved capability to navigate and determine the position of friendly weapons systems and fighting units under conditions of adverse weather, day or night, in all environmental conditions worldwide.

e. (U) Space Surveillance.

f. (U) Space Offense.

g. (U) Space Defense.

- (U) Increase structural hardening and fixed facility camouflage capabilities.

h. (U) Personnel.

- (U) Develop and maintain a sufficient cadre of qualified military and civilian personnel to fulfill the objectives of the Army space program.

i. (U) Weaponry.

j. (U) Total System Supportability and Sustainment

- (U) Provide full system supportability and sustainability analysis to insure that system life-cycle costs are balanced and that systems can be supported and sustained and to ensure necessary facilities are available when required.

- (U) Provide a means to monitor and manage support assets, including supply convoys, support units and on-the-move condition, status and diagnostic reporting for key items of equipment.

k. (U) Environmental/Geophysical Exploitation and Monitoring.

- (U) Provide timely and accurate environmental and life science information techniques, procedures, and equipment for:

-- (U) sensing and modeling the battlefield atmosphere.

-- (U) improving tactical weather intelligence and support needed for command decisions and to complete Intelligence Preparation of the Battlefield.

-- (U) simulating atmospheric phenomena for inclusion in war games, countermeasure studies, and cost and operational effectiveness analyses.

-- (U) quantifying weather and environmental effects on all battlefield weapons systems to assess battlefield effects of candidate directed energy weapons and in suppression of threat directed energy weapons.

- (U) Provide a capability for rapid acquisition of weather and environmental data throughout the commander's area of interest and rapid dissemination of weather and environmental data products throughout the battlefield.

- (U) Provide a capability to collect and disseminate information on soil conditions/vegetation, camouflage, mapping, and charting for Army forces.

l. (U) High Technology and Medicine.

- (U) Control parasitic, bacterial, and viral diseases of military importance and develop an effective medical defense against biological weapons.

- (U) Provide methods and procedures to care for battlefield casualties to reduce and limit disability and death from conventional and nonconventional weapon systems.

- (U) Reduce the impact of high-technology military materiel systems and combat operations on the health and performance of soldiers who use and repair the items and the civilians who make, use, or repair the items.

- (U) Provide technologies to reduce Army facilities' energy consumption.

m. (U) Construction Technology and Materials, Structural Hardening, Fixed Facility Camouflage.

- (U) Develop construction techniques and support of both specialized terrestrial infrastructure facilities and extra-terrestrial platforms and large space structures.

- (U) Provide technology that is needed to increase the return on Army expenditures for construction of new facilities and maintaining existing facilities.

- (U) Provide structures technology.

n. (U) Test and Evaluation Requirements.

- (U) Provide test and evaluation resources to Army major ranges.

- (U) Develop test instrumentation requirements.

- (U) Develop threat target requirements for test and evaluation.

- (U) Develop threat countermeasure requirements for test and evaluation.

- (U) Develop satellites as facilities for carrying out space research and testing.

- (U) Develop test issues and criteria, testing requirements, and documentation for Test and Evaluation purposes.

- (U) Develop the Army Space Test Bed, capitalizing on existing assets by interconnecting and modernizing major test and training ranges.

- (U) Investigate National Aerospace Plane as an Army Space Test Bed asset for timely movement of instrumentation and test items from ground to space and return.

- (U) Develop test and evaluation capability at the major Army ranges to support the Army Goals and Objectives identified at Section IV-F.

- (U) Evaluate and implement space-based platform(s) to include Test and Evaluation instrumentation such as optics, telemetry, etc., in support of specific future programs.

- (U) Provide an integrated set of instrumentation, land, air space, communications, inter-range links, etc., to support the Army Space Test Bed.

Section VI: ARCHITECTURE AND INVESTMENT STRATEGY (U)

A. INTRODUCTION (U)

1. (U) The Army Space Policy mandates that the Army use space capabilities to enhance the accomplishment of strategic, operational, and tactical missions. Further, it states that an evolving space architecture must capitalize on national and joint programs while preserving options that fulfill Army requirements. This section establishes the methodology for implementing this policy and provides directions for its future contents.

2. (U) This edition of the ASMP tasks TRADOC to develop one for future issues. The architecture will identify a clear framework for writing doctrine, developing training programs, initiating changes in force structure, and developing, supporting and sustaining new materiel requirements. See FIGURE 6-1. ASMP architecture (also referred to as the Army Space Architecture) will seek to identify solutions to Army requirements which will be addressed through the CBRS in the appropriate MADPs, Mission Area Materiel Plans, and the Long Range Research, Development, and Acquisition Plan.

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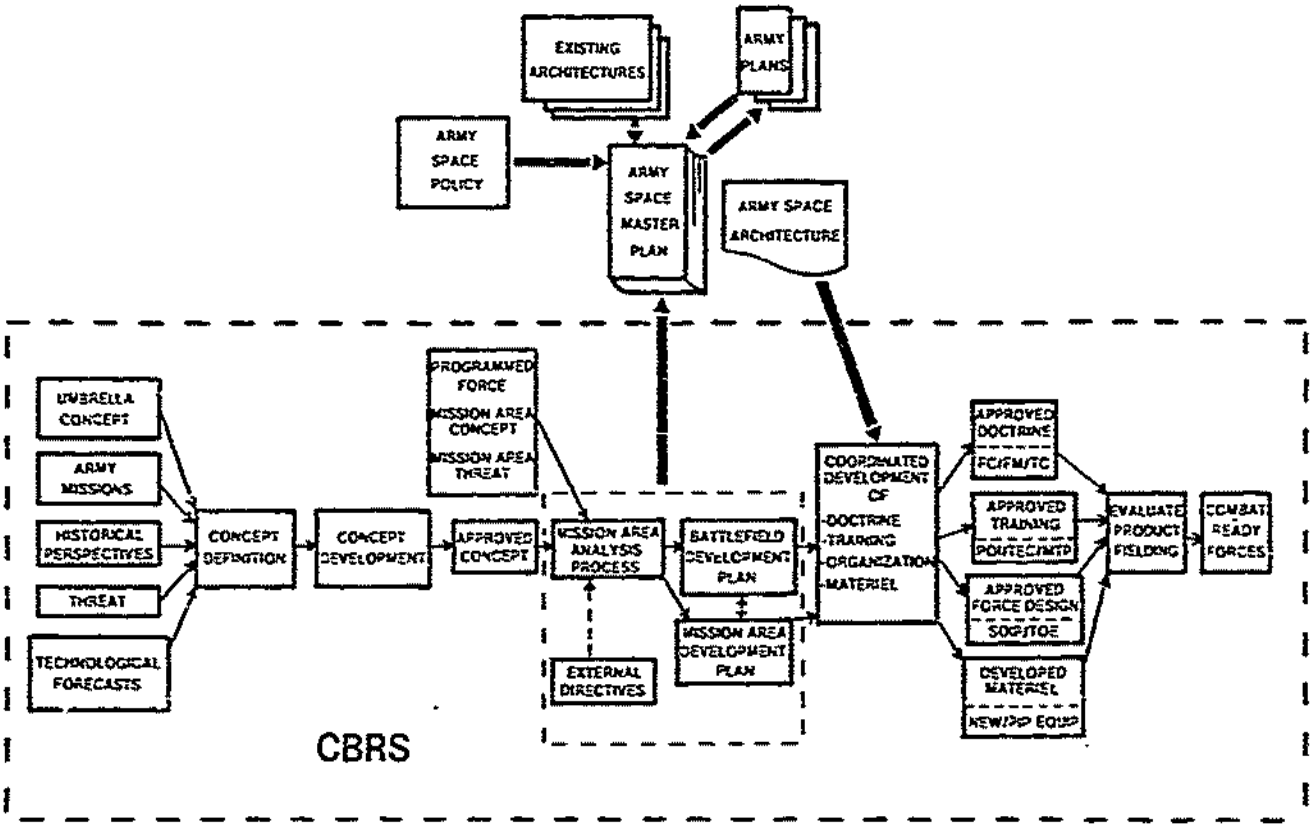

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FIGURE 6-1. (U) ARMY SPACE MASTER PLAN AND CBRS

3. (U) All of the Army space solutions to requirements which emerge from the CBRS will be integrated into the Army Space Architecture. The investment/acquisition strategies will flow out of the integrated architecture and will describe how we are going to implement the strategies of the ASMP.

4. (U) ASMP investment/acquisition strategies will compete in the Program Objective Memorandum process in the same manner as other Army strategies. Fulfillment of space requirements through the architecture and investment/acquisition strategies of the ASMP will be in accordance with the CBRS.

B. ARCHITECTURE (U)

1. (U) TRADOC will build the Army Space Architecture within the purview of the CBRS. The architecture is the documentation of all space solutions to Army requirements and provides a blueprint for planning, developing, and executing initiatives to enhance requirements resolutions.

2. (U) The Army Space Architecture is the indispensable step that will enable the Army to capitalize on space capabilities and realize the goals of the Army Space Policy. It will:

a. (U) Identify space capabilities to resolve Army requirements.

b. (U) Consist of Army space program needs in the areas of doctrine, training, organization, and materiel.

c. (U) Provide a basis for change to the current individual elements of the Army efforts. The architecture will consider and incorporate currently available and projected technologies to support changes to current programs. Battlefield Development Plan deficiencies are a basis but not the total basis. Opportunities presented by technology breakthroughs will also comprise an important basis in the effort.

d. (U) Contain space capabilities that exploit national and other military space systems.

e. (U) Present the baseline of current and projected needs that will form a basis for concluding that the investment/acquisition strategies are appropriate or adequate.

3. (U) A procedure is necessary to select the best space capabilities to resolve Army requirements and to place them in the Army Space Architecture. TRADOC will develop this procedure prior to developing the Army Space Architecture. Initial editions of the Army Space Architecture should reflect present Army space capabilities and predominantly project additional near-term space capabilities.

4. (U) Many Army commands and agencies have activities that are vital to the Army's space effort. The Army Space Architecture must reflect their best solutions to Army requirements. To mention one, SDC is conducting research directly related to a large number of desired Army capabilities. Major project examples are the Airborne Optical Adjunct, Ground Based Laser, High Endoatmospheric Defense Interceptor, and Exoatmospheric Reentry Vehicle Interceptor Subsystem. A wide range of technologies which can be applied to both space and terrestrial requirements is being developed. See FIGURE 6-2 for other technological benefits.

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OPERATIONAL AREA	SDC PROGRAM ELEMENT: SURVEILLANCE ACQUISITION TRACKING & KILL ASSESSMENT	KINETIC ENERGY WEAPONS	DIRECTED ENERGY WEAPONS	SYSTEMS ANALYSIS/ BATTLE MANAGEMENT	SURVIVABILITY LETHALITY & KEY TECHNOLOGIES
DEEP ATTACK	X	X	X	X	X
SPECIAL OPERATIONS	X	X			
CMD, CONTROL, & COMMUNICATIONS	X	X	X	X	X
RECON, SURVEILLANCE, TARGET ACQUISITION	X	X		X	
BATTLEFIELD SUSTAINMENT	X	X	X	X	X
BATTLEFIELD LETHALITY	X	X	X	X	X
SOLDIER/UNIT PERFORMANCE	X	X			X
LIGHTENING THE FORCE	X	X			

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FIGURE 6-2. (U) TECHNOLOGICAL BENEFITS

C. INVESTMENT/ACQUISITION STRATEGY (U)

1. (U) An investment/acquisition strategy is a detailed plan that describes how the Army is going to acquire a space capability and identifies the costs. AMC, as lead agency for materiel solutions, will coordinate with other Army materiel developers and TRADOC to derive the ASMP materiel investment/ acquisition strategies for future iterations of this plan. The Corps of Engineers is a major contributor to the Army program as it relates to national program interfaces, technology transfer from national level programs, and specific initiatives related to construction technologies. In support of this effort, AMC has developed the ASTEP. This initial ASTEP identifies Army space-related research and development activities applicable to Army missions through solutions to Battlefield Development Plan deficiencies. It also maps a strategy for implementing space concepts via an institutionalized Army process as the Mission Area Materiel Plan and Long Range Research, Development, and Acquisition Plan. The scope of this ASTEP is an initial investigation into the relationships between space-related technologies, Battlefield Development Plan deficiencies, SDC research efforts and other-Army space-related work efforts. Future ASTEPs will be expanded to provide a more complete analysis and broader coverage of space-related activities beyond the Army, e.g. Navy, Air Force, national, commercial, civil, academic and allied centers. The ASTEP should be updated at least every 2 years. The ASTEP categories of space-related technology disciplines is at TABLE 6-1.

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TABLE 6-1. (U) Space-Related Technology Disciplines

1. CONTROL, NAVIGATION AND GUIDANCE
2. INFORMATION PROCESSING
3. COMMUNICATIONS
4. RADAR
5. ELECTRO-OPTICS
6. MATERIALS
7. STRUCTURES
8. MANUFACTURING
9. PROPULSION
10. POWER AND ENERGY
11. THERMAL CONTROL
12. MAN-IN-SPACE
13. SURVIVABILITY
14. AUTONOMY
15. TEST AND EVALUATION
16. WEAPONS
17. ENVIRONMENT
18. RANGE INSTRUMENTATION

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2. (U) Future ASMP investment/acquisition strategies not supporting valid requirements will be dropped from the ASMP. Materiel developers should especially note the areas below:

a. (U) In addition to funding through Army appropriations, advantage should be taken of the space-related investment of other government and non-government agencies. By maintaining cognizance of ongoing projects in universities, industry, NASA, Air Force, Navy, TENCAP, national communications and intelligence agencies, and other research and development activities, the Army

can derive considerable benefit with minimal funding commitment. USASA should facilitate the Army's efforts in this area through extensive coordination efforts. Joint research and development efforts should be pursued where appropriate. To implement the Army Space Policy, the Army must be prepared now to make low level funding commitments to promising outside projects in order to leverage them toward satisfaction of Army needs. The Army should also attempt to increase its influence on inter-agency management bodies responsible for: (1) establishing systems requirements, funding levels, and allocation of system capacity for shared systems; or (2) setting individual agency funding levels from shared appropriations.

b. (U) Materiel Developers should structure systems to test space research technologies prior to substantial investments and make maximum use of the launch capabilities provided by the DOD Space Test Program. The Army proponent for the Space Test Program will provide assistance in preparing/coordinating space flight requests with the Space Test Program Office. Another vehicle available to the Army to test or demonstrate the utility of space capabilities is the Army space Tactical Demonstration Program. Both TRADOC and AMC should exploit this program to the greatest extent possible.

D. SUMMARY (U)

(U) The next ASMP will contain validated requirements, a supporting architecture, and investment/acquisition strategies. The Army Space Architecture will describe the actions which the Army needs to take to acquire space capabilities to solve battlefield deficiencies.

Section VII: IMPLEMENTATION (U)

A. INTRODUCTION (U)

(U) As the ASMP matures, it will fully describe and define the Army space program as it matures. This edition is intended to set the foundation upon which the program can grow. This section lays out those major tasks in the categories of MANNING, TRAINING, PLAN EXECUTION, and REVISION to institutionalize, perpetuate, and move the Army towards realization of the Army space program goals and objectives. Furthermore, actions will be added to the plan as they are identified in order to reach objectives and to achieve Army space program goals. Unless indicated to the contrary, only lead agencies are listed in the taskings below.

B. GENERAL (U)

(U) The DCSOPS approves the Army space program goals and objectives for the draft ASMP prior to scheduled revisions. USASA has overall responsibility for the development and management of the ASMP. Appropriate functional area proponents will develop future portions of the ASMP. The plan is executed through special programs, the CBRS, Life Cycle System Management Model, Mission Area Materiel Plan, Planning, Programming, Budgeting and Execution System, or other Army management systems as appropriate. Revision of this plan will occur every two years. The Army Space Council resolves conflicts in executing the ASMP. Commander, TRADOC, will resolve all conflicts resulting from the Army Space Architecture.

C. IMPLEMENTATION TO ACHIEVE ARMY SPACE PROGRAM GOALS (U)

1. (U) Posturing the Army. The first goal is to posture the Army for operations in the space age. To reach this goal, this edition of the ASMP has the objective of developing Army space expertise. This section lays a foundation Army-wide that substantially moves the Army to accomplish this goal. This is achieved by:

a. (U) Identifying Army-wide specific space billet/position requirements to the Office of the Deputy Chief of Staff for Operations and Plans and the Office of the Deputy Chief of Staff for Personnel to get authorized spaces into the force structure.

b. (U) Reviewing, amending, and developing the personnel assessment and long-term career management plan of persons identified or trained as space experts. This is intended to place the proper person in the right job without sacrificing the soldier's career.

c. (U) Producing and describing in a single publication current (and planned where available) space resources. This will be used as an aid for Army Space Architecture development and as a source of information for all Army use.

d. (U) Developing a procedure to build the Army Space Architecture. The procedure will consider determination of a baseline comparison to where the Army wants to go with the space program. The initial architecture will be weighted to the near-term.

e. (U) Identifying test and evaluation support requirements for Army space efforts so that facilities and equipment will be in place when needed to support the Army space program.

2.

a. (U) The development of the Army Space Architecture is the most important task to be achieved in the ASMP. The architecture will describe how the Army will enhance strategic, operational, and tactical missions using space systems. TRADOC has the responsibility to develop the architecture with support from other Army Commands/Agencies. As lead materiel developer, AMC will develop the materiel investment/acquisition strategies for each system selected for the integrated space architecture. This will allow Army decision makers the opportunity to make purchase decisions prior to an artificially established architecture completion date.

b. (U) The Army will be better able to capitalize on joint programs that fulfill Army requirements since they will be incorporated in the architecture.

3. (U) Developing space-related capabilities. The last Army space program goal is to develop additional essential space-related capabilities. Two objectives in this ASMP support it. They are to develop innovative space applications that will improve the Army's ability to accomplish its missions; and, to insure total space systems sustainability and supportability. Again, combat and materiel developers will principally work

towards achieving this goal by determining how space operations or technologies can solve Army requirements. Sustainability and supportability will play an important role in reaching this goal, and specific tasks in this area will grow with the architecture. This section assigns tasks to establish a firm basis from which to develop additional essential space-related capabilities.

a. (U) Not only will the Army develop a long-range career management plan for space experienced personnel, but also opportunities will be investigated to determine where space systems or capabilities allow the Army to achieve personnel or equipment economies of force while maintaining or improving overall land combat power. These economies could ultimately contribute to an increase in combat power.

b. (U) TRADOC will perform "front-end" analyses of training requirements and prerequisites for persons with space skill codes.

c. (U) The development of key operational capabilities, testing space-based terrestrial force improved capabilities and an Army proponent for strategic combat and materiel development will support this goal as well as the Army Space Architecture.

D. MANNING TASKINGS (U)

Action Number	Agency	Action	Suspense
1.	ODCSOPS	Identify specific space billet/ position requirements for HQDA. Provide them to ODCSPER.	Oct 87
2.	MACOMs	Identify specific billet/position requirements for space activities qualified personnel. Report findings to ODCSOPS by suspense. ODCSOPS provide a copy to ODCSPER.	Oct 87
3.	Materiel Developers	Identify specific billet/position requirements to develop and acquire space systems. Report findings to ODCSOPS by suspense. ODCSOPS provide a copy to ODCSPER.	Oct 87
4.	USASA	Identify specific billet/position requirements to operate and manage space systems. Report findings to ODCSOPS by suspense. ODCSOPS provide a copy to ODCSPER.	Oct 87

5.	AMC	Identify by function those materiel systems which can be product improved or replaced by space capabilities to achieve a personnel and equipment economy of force while maintaining or improving overall land combat power.	Oct 87
6.	ODCSPER	Identify assessment sponsors to coordinate initial Army personnel requirements to develop, acquire, operate, manage and task proposed space programs. ODCSPER will direct MILPERCEN to implement extraordinary personnel management procedures for personnel awarded Skill Code 3Y. Consider development of functional area management (long term) vice management by Army Space Institute.	Nov 87
7.	MILPERCEN	Determine level of Army participation (including assignment of technical and program management support personnel) for joint and other service space programs.	Nov 87
8.	MILPERCEN	Determine priority for personnel assignment to meet objectives of the Army Space Policy. Handle as nominative positions those "key" space billets identified by Skill Code proponent.	Nov 87
9.	ODCSOPS	In conjunction with Office of the Deputy Chief of Staff for Logistics, identify where space systems and technologies can cause force structure transfers of combat support and combat service support manpower to combat manpower.	Mar 88
10.	MILPERCEN	Assign personnel to space-related billets via space fundamentals courses.	On-going
11.	TRADOC	Develop long-range career management plan for space experienced personnel. Determine the necessity and desirability of a unique Functional Area or Branch for space experienced personnel.	On-going

12.	MILPERCEN	Solicit applicants and convene administrative boards to select nominees for NASA astronaut candidate (pilot and mission specialist) selection.	As Required
13.	MILPERCEN	Assign NASA-selected astronaut candidates to USASA with duty assignment at NASA for astronaut training program. Negotiate extension of assignments with NASA as requested.	On-going

E. TRAINING TASKS (U)

1.	TRADOC	Develop Army space doctrine and insert it and applicable space capabilities into appropriate programs of instruction and publications.	Apr 87 Start
2.	TRADOC	Prepare a descriptive list of space-related training courses.	Nov 87
3.	ASA(RDA)	Identify civilian companies to TRADOC and MILPERCEN for Training With Industry opportunities in space-related areas.	May 88
4.	TRADOC	Initiate a Front End Analysis/Need Assessment to determine training requirements associated with Skill Code 3Y and to determine educational requirements for space-related knowledge with Army professional military education.	Jul 88
5.	TRADOC	Determine space qualification courses for Army space related (skill code 3Y) billets.	Aug 88

F. PLAN EXECUTION TASKS (U)

1.	TRADOC	Develop a procedure on how to accomplish Army Space Architecture development and on what base systems to start.	Jul 87
2.	USASA	Become an active member of the Mission Area Materiel Plan requirements review team in order to have input on all plans that contain space materiel solutions.	Jul 87

3.	ODCSOPS	Appoint a Strategic Level of War proponent or proponents for space combat and materiel development responsibilities.	Aug 87
4.	TRADOC	Consider ASMP candidate requirements (section V) in development of the Army Space Architecture.	Sep 87
5.	ODCSOPS	Develop key operational capabilities for space missions.	Oct 87
6.	AMC	Identify to ASA(RDA) systems that could test space research technologies in the Space Test Program.	Nov 87
7.	AMC	Develop an integrated plan for an Army Space Test Bed and an Integrated Test Range Facility. Coordinated effort to be performed through the Space and Technology Working Group and on group efforts of US Army Test and Evaluation Command (TECOM).	Nov 87
8.	AMC	Revise and publish the Army Space Technology Exploitation Plan. Identify in it those space technological capabilities for which there is not yet an operational concept or requirement.	Apr 88
9.	USASA	Describe in a single publication current space resources.	Jul 88
10.	ODCSOPS	Coordinate with the other services and develop a plan to accomplish Army space program objective 4, page 33 of this ASMP.	Jan 89
11.	TRADOC	Develop the ASMP architecture.	Jul 89
12.	TRADOC	Determine non-materiel investment/ acquisition strategies and integrate them into the Army Space Architecture.	Jul 89
13.	AMC	Develop the materiel ASMP investment/ acquisition strategies. Provide them to TRADOC and USASA.	Jul 89
14.	USASA	Monitor the cost parameters for the Army space program.	On-going

15.	TRADOC	Coordinate space operations O&O Plans with USASA.	On-going
16.	USASA	Identify Army space needs in support of unified and specified commanders. Provide them to TRADOC, USSPACECOM and Army Staff.	On-going
17.	AMC/TECOM	Identify, in conjunction with TRADOC, test range requirements to support test and evaluation of Army space systems.	On-going
18.	PA&E	Assist in programming resources for MACOMs to accomplish ASMP directed actions.	On-going
19.	USASA	Plan strategies for Army space involvement.	On-going
20.	ASPO	Coordinate the incorporation of TENCAP Program efforts into general ASMP structure.	On-going
21.	AMC/TECOM	Exploit the Army's space capabilities and exert its influence with the space community via management, development, and operation of the High Energy Laser Systems Test Facility.	On-going
22.	TRADOC	Develop and manage space requirements.	On-going

G. REVISION TASKS (U)

1.	AIA	Develop and revise ASMP THREAT SECTION and appendix.	Jan 89
2.	ODCSINT	Validate ASMP THREAT SECTION and appendix.	Mar 89
3.	OTJAG	Develop and revise ASMP INTERNATIONAL LAW SECTION and appendix.	Nov 89
4.	TRADOC	In coordination with other combat developers and materiel developers, review and revise ASMP REQUIREMENTS, ARCHITECTURE and INVESTMENT STRATEGY, SECTIONS and appendices on an annual basis. Significant changes will be published on an interim basis annually and complete revisions of the sections to be published on a bi-annual basis.	Nov 89

5.	ASPO	Coordinate with TRADOC and develop the SCI TENCAP requirements and program definition in support of the revised ASMP REQUIREMENTS.	Nov 89
6.	USASA	Revise the ASMP.	Nov 89

Section VIII: ARMY SPACE MASTER PLAN EVALUATION and ANALYSIS (U)

A. EVALUATION AND ANALYSIS (U)

(U) USASA will evaluate the Army's progress in the ASMP and report to the VCSA at appropriate Army Space Council meetings. Achievements will be measured in near, mid, and far term space solutions to Army requirements. The results of these evaluations shall form the basis of proposed goals and objectives for Deputy Chief of Staff for Operations and Plans approval and guidance for plan revision. Continual coordination with USASA and US Army Space Institute is key.

B. MANAGEMENT SYSTEMS (U)

(U) To the extent practical, existing resource and management systems shall be used. Timelines are important tools to everyone, and if priority to one specific timeline is necessary, it should be given to the Planning, Programming, Budgeting and Execution System timeline.

C. CHANGES (U)

(U) Proposed changes to the plan should be submitted to:

US Army Space Agency
ATTN: MOSA-PP (Master Plan)
Peterson AFB, CO 80914-5001

GLOSSARY

GLOSSARY

ABM	Anti-Ballistic Missile Systems
AFSATCOM	Air Force Satellite Communication System
AIA	Army Intelligence Agency
AMC	US Army Materiel Command
ASA(RDA)	Assistant Secretary of the Army (Research, Development, and Acquisition)
ASMP	Army Space Master Plan
ASPO	Army Space Program Office
ASTEP	Army Space Technology Exploitation Plan
CBRS	Concept Based Requirements System
CSA	Chief of Staff, US Army
DOD	Department of Defense
ELINT	Electronic Intelligence
EnMod	Environmental Modification
EORSAT	ELINT Ocean Reconnaissance Satellite
ERPHO	Earth Resources Photographic (Satellite)
FLTSATCOM	Fleet Satellite Communications System
GMF	Ground Mobile Force
HIRES	High Resolution Satellite
HQDA	Headquarters, Department of the Army
IMSAT	Imagery Satellite
JCS	Joint Chiefs of Staff
KM	Kilometer
MAA	Mission Area Analysis
MACOMs	Major Commands
MADP	Mission Area Development Plan
MC&G	Mapping, Charting, and Geodesy
MEDRES	Medium Resolution Satellite
MI	Military Intelligence
MILPERCEN	US Army Military Personnel Center
NASA	National Aeronautics and Space Administration
NRT	Near-Real-Time
ODCSINT	Office of the Deputy Chief of Staff for Intelligence
ODCSOPS	Office of the Deputy Chief of Staff for Operations and Plans
ODCSPER	Office of the Deputy Chief of Staff for Personnel
OTJAG	Office of the Judge Advocate General
PA&E	Program Analysis and Evaluation Office
PHOTOGEO	Photographic/Geophysical (Satellite)
RDT&E	Research, Development, Test, and Evaluation
RORSAT	Radar Ocean Reconnaissance Satellite
RSTA	Reconnaissance, Surveillance, and Target Acquisition
SATCOMA	US Army Satellite Communications Agency
SDC	US Army Strategic Defense Command
SDI	Strategic Defense Initiative

Satellite Communications
est and Evaluation Command
Exploitation of National Capabilities
raining and Doctrine Command
nformation Systems Command
pace Agency
er-in-Chief, Space
tes Space Command
of Staff, US Army
II

DEFINITIONS

MASTER PLAN DEFINITIONS

An integrated blueprint for planning and
ing, organizational and materiel
ecessary to ensure appropriate space
ield requirements. It includes the
sequence, of essential space related
successful execution of land combat

use of weapons on space platforms to
space targets, including enemy ground
ce systems. Army Space Operations

use of space systems in the conduct of
to improve the effectiveness of
Space Operations Concept Mar 87.

ATEGY is a detailed plan that
going to get a space capability and

the natural or manmade condition or
effect when imposed on the battlefield
enhances the conduct of military

uses available military resources to
hin a theater of war. Most simply, it
it operations. It also involves
npaigns. Campaigns are sustained
eat an enemy force in a specified space
and sequential battles. The
ection of objectives, and actions taken
the enemy all set the terms of the
ctical gains. They are all part of the
In AirLand Battle doctrine, this level
forces and logistical support,
nd and air maneuver, applying
ires in depth, and employing
gical warfare. FM 100-5.

rovide freedom of action in space for
directed, denying it to an enemy, and
f protection of US and US allied space
my space systems. Space control
ements of the space defense mission.

SPACE-RELATED TECHNOLOGIES are the 17 space-related technology disciplines developed by the Air Force in its Military Space Systems Technology Plan were adopted as the baseline to those Technologies applicable to the utilization of space in support of the Army Mission.

SPACE SUPPORT OPERATIONS are operations required to ensure that space control and support of terrestrial forces are maintained. They include activities such as launching and deploying space vehicles, maintaining and sustaining space vehicles while on orbit, and recovering space vehicles if required. JCS Pub 1.

STRATEGIC LEVEL OF WAR is that military strategy that employs the armed forces of a nation to secure the objectives of national policy by applying force or the threat of force. Military strategy sets the fundamental conditions for operations. FM 100-5.

TACTICAL LEVEL OF WAR is the specific techniques smaller units use to win battles and engagements which support the operational objectives. Tactics employ all available combat, combat support, and combat service support. Tactics involve the movement and positioning of forces on the battlefield in relation to the enemy, the provision of fire support, and the logistical support of forces prior to, during, and following engagement with the enemy. (Corps and division, operational and tactical levels are clearly separable.) FM 100-5.